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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/978,291	10/16/2001	Qilian Liang	PD-201153	4656
7590 02/23/2005			EXAMINER	
Hughes Electronics Corporation			KIM, KEVIN	
Patent Docket Administration				
Bldg. 1, Mail Stop A109			ART UNIT	
P.O. Box 956			2634	
El Segundo, CA 90245-0956			PAPER NUMBER	

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/978,291

Applicant(s) ☒

LIANG ET AL.

Examiner

Kevin Y Kim

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 October 2001.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-24 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 10-16-2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-10, 12-21, 23 and 24 are rejected under 35 U.S.C. 102(a) as being anticipated by the admitted prior art (Fig. 12 and 13).

#### **Claims 1, 12, 23 and 24.**

Fig. 12 of the present application (admitted as prior art) discloses a demodulator and a method for use in a communications channel, comprising:

a channel estimator section (1204) configured to receive a modulated signal over said communications channel and generate reference symbols based on said modulated signal',

a fuzzy adaptive filter (FAF) parameter determination section (1306) coupled to said channel estimator section and configured to receive said modulated signal and said reference symbols and generate signal samples based on said modulated signal and said reference symbols; and

a detector section (1208) coupled to said FAF parameter determination section and configured to receive said signal samples and generate a soft decision signal and a hard decision signal based on said signal samples.

It should be noted that the “fuzzy adaptive filter parameter determination section” of the claim was read on the channel compensation section (1206) of Fig. 12 because, even though the limitation is named differently, it performs the same function of the prior art’s channel compensation section. In other words, since no function related to “fuzzy adaptive filter (FAF) parameter determination” is recited, the scope of the claimed section has been defined by the specifically recited function, i.e., “receive said modulated signal and said reference symbols and generate signal samples based on said modulated signal and said reference symbols,” which is likewise performed by the channel compensation section (1206) of the admitted prior art.

**Claims 2 and 13.**

Fig. 12 of the present application (admitted as prior art) further shows;  
a mapping section (1216) coupled to said detector section and configured to receive said hard decision signal and generate a mapping signal based on said hard decision signal,  
a modulation removal section (1214) coupled to said mapping section and configured to receive said mapping signal and said modulated signal and generate a modulation removal signal based on said mapping signal and said modulated signal,  
a phase estimation section (1212) coupled between said FAF parameter determination section and said modulation removal section and configured to receive said modulation removal signal and generate a phase estimation signal based on said modulation removal signal,  
wherein said FAF parameter determination section is configured to generate said

signal samples based on said modulated signal, said reference symbols and said phase estimation signal.

**Claims 3 and 14.**

Fig. 12 of the present application (admitted as prior art) further shows;  
a matched filter section (1202) coupled between said communications channel and said channel estimator section and said FAF parameter determination section; and  
a buffer section coupled between said matched filter section and said modulation removal section.

**Claims 4, 5,9,15,16 and 20.**

The “Discussion of the Background” describes that the demodulator is used for a satellite communications channel, particularly a satellite downlink communication channel as it is a demodulator.

**Claims 6, 7,17 and 18.**

Fig. 12 of the present application (admitted as prior art) further shows a QPSK detector (1208) and a QPSK mapper (1216).

**Claims 8 and 19.**

Fig. 12 of the present application (admitted as prior art) further shows a block phase estimator (BPE) (1212).

**Claims 10 and 21.**

A television, more specifically a satellite signal receiving set top box, among other things, reads on a device including a satellite signal demodulator for receiving satellite television signal broadcast.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 11 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Land (US 6,512,551) and Park (US 6,687,518).

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The admitted prior art discloses all the subject matter claimed but fails to mention that a device including the demodulator comprises “a Bluetooth-enabled device.” It is quite established that a personal computer can function as a television set when equipped with a tv tuner, as evidenced by Lund at col. 5, lines 16-21. Furthermore, Part teaches that a personal computer increasingly uses a Bluetooth communication protocol for interfacing other devices, see col. 4, lines 21-31. Thus, it would have been obvious to one skilled in the art at the time the invention was made to provide Bluetooth communication capability to a personal computer, equipped with a tv tuner, since it is considered as a increasing widespread and preferable wireless communication technology for interfacing other devices as taught by Park.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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